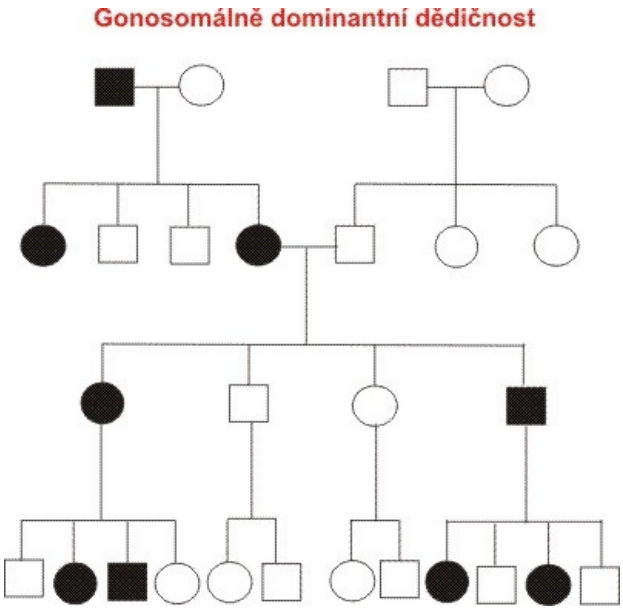
Gonosomal dominant inheritance

Gonosomal dominant inheritance (GD) is the transmission of a trait of interest, the allele of which is located on a gonosome. The mutated allele has a complete dominance relationship with the original allele. The vast majority of gonosomally linked traits have gene located on the X chromosome; an exception could be the pseudoautosomal region on the Y chromosome. In the case of GD inheritance, both males (hemizygotes), and females, who are most often heterozygous, will be affected . The typical feature of the pedigree of a fully penetrant, X-linked dominant disease involves affected males. Because they pass the Y chromosome on to their sons, we find 100% affected daughters and no affected sons in their offspring - see the picture below (of course, there is a theoretical possibility of acquiring the mutated allele from the mother if both parents have the same disease).

The following picture is an example of a family tree with the occurrence of gonosomal dominant inheritance.



Examples

- **X-linked hypophosphatemic rickets (vitamin D resistant rickets)**, OMIM307800 (https://omim.org/entry/307800)
- **Incontinentia pigmenti**, OMIM308300 (https://omim.org/entry/308300)

Linka

Related links

- Autosomal dominant inheritance
- Autosomal recessive inheritance
- Gonosomal recessive inheritance
- Non-Mendelian inheritance

Monogenically inherited diseases		
autosomally inherited diseases	autosomal dominant inheritance	autosomal inherited agammaglobulinemia • achondroplasia • Apert syndrome • brachydactyly • familial hypercholesterolemia • Huntington's chorea • Marfan syndrome • myotonic dystrophy • neurofibromatosis • osteogenesis imperfecta (late form) • polycystic kidney disease • polydactyly • Thomsen syndrome
	autosomal recessive inheritance	autosomal inherited agammaglobulinemia • Ataxia telangiectasia • cystic fibrosis • phenylketonuria • Friedreich's ataxia • osteogenesis imperfecta (early form) • polycystic kidney disease • galactosemia • glycogenoses • congenital adrenal hyperplasia • sickle cell anemia • Hurler syndrome • Tay-Sachs disease • Thomsen syndrome • thalassemia • Werdnig-Hoffmann disease • Wilson disease
gonosomally inherited diseases	gonosomal dominant inheritance	incontinentia pigmenti • vitamin D-resistant rickets
	gonosomal recessive inheritance	Becker muscular dystrophy • Bruton's agammaglobulinemia • color blindness • Duchenne muscular dystrophy • hemophilia A • hemophilia B • Wiskott-Aldrich syndrome
	Y-linked inheritance	--